

FEREOL

A CASE  
OF  
RABID HYDROPHOBIA.

✓  
By DOCTOR FEREOL.

*Translated from the French by*  
BARNARD ELLIS, M.D.,  
Alumnus of the College of Physicians and Surgeons, New York City.



[REPRINTED FROM THE OHIO MEDICAL AND SURGICAL JOURNAL.]

COLUMBUS:  
NEVINS AND MYERS, BOOK AND JOB PRINTERS.  
1878.



A CASE  
OF  
RABID HYDROPHOBIA.

---

BY DOCTOR FEREOL.

---

*Translated from the French by*  
BARNARD ELLIS, M.D.,  
*Alumnus of the College of Physicians and Surgeons, New York City.*

---

All that which relates to the disease of hydrophobia has the sad privilege of exciting our interest in a high degree, not only on account of the terrific spectacle presented by such a horrible malady, but on account of the numerous questions which arise in general pathology, and in doctrines which arise when we contemplate this strange scourge, so much studied, and so little understood.

The case which I submit for the consideration of the Academy merits, it seems to me, special attention.

The question is, in fact, whether we can attribute to a bite given two and a half years before death the disease which took the patient off in three days.

I am the first to acknowledge all the alarm that such a



question is apt to create, and the unpleasant impression which one is apt to produce by reading it. But the case having been brought before me, I have no right to shun that discussion which the subject requires. Then, what could I do better than to present it to this learned body which contains specially the most competent men in all branches of Biological science, and whose works have already more than once thrown brilliant light upon the pathology of this disease.

Now, I say, at the threshold of this discussion, that it is an extraordinary exception to admit so long a period of incubation. The average duration of time, at the expiration of which a person has the right to believe himself free from inoculation, is, happily, much shorter; the limit of from forty to sixty days being true in most cases.

In so delicate a question, I shall be excused if I do not omit any of the details which I have been able to gather, as the smallest fact may be here of the greatest importance; on it might depend a modification of the diagnosis, and it is for this reason that I have been so particular to give all the facts I was able to gather. I now present to you the clinical notes taken, under my direction, by M. Fourestie, the interne in my service.

#### CLINICAL NOTES.

On June 18, 1874, at 8.30 o'clock A.M., D—, aged forty-eight years, at the time doctor of medicine and pharmacist, entered the above named hospital. This patient is of a robust constitution; a little above average size; complexion dark brown.

Seated in his bed, his eyes brilliant, and very restless, we are struck at once by his strange air, and wild looks. His answers are short and rapid—his pupils much dilated. He affects to be calm, seeing those around are so, but we feel that he is internally anxious and agitated. He tells us that

he has passed the night in a state of extreme surexcitation, and, not having been able to sleep, has written more than fifty letters. Being willing to give us an idea of his temper, he says he seldom puts himself in a passion, but if he ever did have a quarrel with any one, he would cut them into little pieces. Meanwhile, he pronounces no word incoherently, and answers very clearly to our questions.

He complains of a profound aversion to liquids, an aversion which has already lasted several hours, and he brought several œsophageal bougies for us to try, as he said, to make him drink in spite of himself. He demands an emetic to *clear out the bile* which is suffocating him, and constricting his throat; he also desires a bath, and assures us he will not be afraid to go into the water.

We present to him a mirror, and he turns his head away precipitately, and at the same time is taken with a laryngeal spasm, marked by a catching of the breath (like a man who has been suddenly surprised by a dash of cold water); still he lets us examine his throat with a silver spoon, without manifesting any repulsion. If we present to him a glass to drink from, even empty, he refuses it immediately.

In passing the hand two or three times before his face, so as to disturb the air, we produce a spasm, and the patient recoils with fright. A handkerchief agitated before his face produces the same effect. The fresh air from the window produces disagreeable impressions, and he asks that we shut the door. We present to him a little bottle of ether which he brought, but he cannot support the odor, and begs us to close it immediately. He says he has eaten nothing for two days, and feels weak, but has no appetite. We present him a piece of bread, of which he eats several mouthfuls, slowly, but without satisfaction. He complains of a dry mouth, which, he says, increases the difficulty of swallowing. *He has no sputation.* Dr. Féréol discovers a cicatrix on the dorsal surface of the left hand, at the level of the

second interosseous space. Asking him its origin, he answers rapidly, and without seeming to attach any importance to it, that he had been bitten by a mad dog a long time ago. He tells us that, yesterday, he suffered pain in the left arm, vaguely in all the arm, finally fixing itself principally about the biceps. Let us remark here, once for all, that the cicatrix did not undergo any appreciable change during the course of the disease, and that it was not specially painful.

Our patient has a little trembling of the lips, and the two hands extended, open, show slight oscillations. The tongue is gray and a little pasty; the posterior portion of the pharynx is of a brilliant red, contrasting with the paleness of the palate and of the buccal mucous membrane. No pain on pressure, either upon the larynx or upon the sides of the neck. No hyperesthesia of the skin; on the contrary, he allows us to pinch him very severely without knitting the brows, and says he feels it plainly, but that it gives him no pain; and he adds, with a sort of boasting manner, that he has often seen danger, but that he don't cry easily.

Examination of the chest, discovers a slight pleural friction, sound anteriorly, and on the right side. During this examination, the patient prattles without cessation; is much agitated, and several times slips out of his bed and in again. His features are drawn, his face anxious. At the least noise, he turns his head and beseeches for a little calm. We prescribe an enema of grammes, *juv.*, (about 60 grains) chloral and 12 drops laudanum.

18th June—evening. The day has been calm. The enema was not given till nearly 3 P. M. It has been retained. We are able, by several artifices, (a straw tube in a bottle, covered with willow wicker work) to make the patient swallow a little beef tea, and half a glass of beer; he has eaten several mouthfulls of meat. We offer him cherries, of which he swallows several, but trying to get the pit out of the cherry, caused a slight spasm and fright. M. Féréol



seeing this, stones several cherries for him, and then he swallows without difficulty, excusing himself for the trouble he gave us, and saying that before to-morrow he will have eaten them all.

He says he is perfectly sensible ; that he is cured ; that he has slept a little ; that he shall go to sleep to-night ; that to-morrow there will be no trace of his disease, and he will resume his occupations. Nevertheless, he cannot drink at this moment. He takes, without fear, a glass which we offer, containing a little beer ; he keeps it a long time, but cannot decide to carry it to his lips ; is calm ; prattles of things and men ; raises the glass to his cheek as if to scratch himself ; all this giving him no spasm. But he cannot decide to attempt to drink, and finishes by depositing the glass, saying "this beer is too strong, and what I have already taken has gone to my head."

His pupils are continually much dilated, but on turning them to the light, they contract noticeably. During this conversation, which has been pretty long, and quite calm, the patient appears a little odd and seems rather eccentric ; sucking habitually the stone of a prune, or apricot, or date, saying it has been his custom for a long time, because he is sensible that his saliva is thick and prevents him from drinking. He relates to us that he was a student fourteen years, and that at that epoch of his life he frequently drank to excess, especially of wine. He would drink very often five or six bottles of wine, he says, without any inconvenience, but never absinthe, and rarely brandy. Since then, say twenty years, he has been very sober. He never drinks either wine or liquor. He made himself, in his laboratory, with glycose and hops, but without alcohol, a beer, which he says was his only drink. He assures us that he feels very well and that he sees nothing in his state but a nervous surexcitation, which he attributes to his troubles and annoyances, and disappointments in business and friendship, and of which he will be master in a few days.

He says he has patients whom he is attending, and he has not time to be sick.

He adds that, besides, he has already had an attack analogous to this, but he feels this attack is not so severe as that; that it was about a year ago; that he had been to consult Dr. Potain on this subject, but that he did not follow up the inquiry. We prescribe a second enema like the first.

19th June—morning. The injection has not been retained; sleeplessness absolute.

The patient has gotten up several times and taken his clothes, wishing to go out, but was easily convinced by a man whom we had left to watch him, that he ought to lie down and rest tranquilly.

On entering his room at half-past eight A. M., it is easy to see that his condition is singularly aggravated. At the moment when we open the door, the patient jumped up in surprise, and hid himself behind his bed, crying, "Shut! shut the door." His voice choking, stifling. We heard it break between each word. The least gesture near him seems to put him in confusion. Seeing a red handkerchief which he recognized and which he had used yesterday, puts him in a state of unconquerable terror. He implored us for silence and repose. We ask him if he will take a bath. He turns away with terror and says it will be impossible to-day.

His air is haggard, his physiognomy terrified. The laryngeal spasms have increased in frequency and in intensity; the bile is stuffing him up, he says, and he demands an emetic.

He complains that something has its claws on his throat, and is strangling him; and at the sight of the silver spoon we used yesterday, he recoils with fear and has a spasm. Nevertheless, he insists that we should examine it, and says it will be possible with an iron spoon. With the iron spoon, we press down the tongue without difficulty,



and find the conditions same as yesterday. No sputation. The pupils are still more dilated than on last evening. It is with difficulty that we perceive the iris, forming a circle of extreme tenuity. No cutaneous hyperesthesia, on the contrary, there is an absence of all kinds of pain very pronounced.

It is absolutely impossible to make him take anything; the mere idea causing a spasm and a sensation of unspeakable horror. He has not touched the cherries of last evening, and cannot look at them without fear. The pulse and temperature appear normal; no headache; no localised pain, and only this constriction of the throat, with the idea that he needs an emetic, though he has no nausea, no retching, and not the least cough. We find no more the pleural friction sound which we so plainly heard yesterday. The patient has not been to the water closet. He says he has urinated, but that appears doubtful, as we find no urine, and he has not been seen to urinate. Until the present moment, there has been no furor; only agitation.

Towards 2 o'clock P.M., an attack of fury sets in. He precipitates himself against the doors; he screams out; he complains that he is being strangled, and demands that we bring instantly a priest. At the same time he commences to expectorate. We succeed in getting him to bed, and putting him in a straight-jacket. We inject twice, two-thirds grain of chlorhydrate morphine. These injections brought a little repose.

During this fit the patient pronounced no phrase incoherently. He appears to submit blindly to a force which makes him vociferate loudly, and which agitates him, but he is not delirious, scientifically speaking. An instant after giving way to his rage, he asks pardon, excuses himself for all the trouble he has given, assures us he is going to be calm, he will command himself, etc., etc. He is conscious of the gravity of his condition, and asks earnestly that he may

not suffer too much. He wishes us to cover up the mirror of his room, but he cannot bear any longer the sight of a white sheet; and we are obliged to surround the bed with colored curtains.

Towards 9 o'clock P.M., the saliva has returned more abundantly. Each time that he wished to expectorate he warns the attendants not to come near him, as if he had a consciousness that his expectorations would be injurious to them. He again insists upon having an emetic to "clear out the bile which is suffocating him."

Dr. Féréol remarks that very often the sputation is preceded by a special movement. We should say that the effort to vomit was circumscribed by the back part of the throat, without any action of the diaphragm, or any effort of regurgitation. It is in these moments that the patient is agitated the most. He says he wishes to vomit, and asks to be turned on his side, and that we loosen the strings of the "camisole de force," (straight-jacket), so that he can "disembarrass himself of the bile which is choking him to death." He supplicates us in the most humble, and most touching accents, that we take off the straight-jacket which binds him: and invokes with an emphatic exaltation, but not menacingly, the rights of the brotherhood; says he wishes to do harm to nobody; that he knows he is going to die, but he demands instantly that we do not add to his sufferings by keeping him thus bound. Then he speaks of his mother, of whom he is the only support, and upon which he weeps he speaks of his friends, and calls again for the priest. New enema, of morphine 45-100 of a grain.

At 11 o'clock at night, we find the patient very calm, but it is already easy to perceive that he is not conscious of his state. He has urinated in the bed. He hardly recognizes us. His respiration is heavy and slightly stertorous; he expectorates at each instant without trying to avoid the persons around the bed. We are told that he has had a

violent access, during which he has cried, "Thieves! Murder!" Another enema, morphine 30-100 grain. After our visit, he had two more fits; he broke the cords which confined his legs, and struggled violently. The patient did not succumb suddenly, but after having labored for breath for a quarter of an hour, died at 3 o'clock A.M.

Such is the picture, perhaps a little faint, of the disease which was unfolded under our eyes. We will now give such information as we were able to get from several members of his family.

D—— has twice had typhoid fever, once in his youth, and the second time in 1860. (thirty four years old.) This last sickness was the only one we could confirm, and was very grave. In December last he had the influenza; but, aside from sore throat, which he seems to have had frequently, he enjoyed habitually excellent health. During his long course of study, devoted successively to medicine and to pharmacy, he is said to have imposed upon himself many privations. Without any resources, he paid for his lectures by working as conductor of a locomotive. Since then he has preserved a gloomy and little expansive temper. Most of his relations and friends have described him as a man very calm, and very peaceable; still, one of his friends said he had seen him several times dreadfully angry. Endowed with great energy, he has saved the lives of several persons under diverse circumstances. He was named "Knight de la Legion d'Honneur," for his brilliant conduct during the siege of Paris. The folks around him assured us that, so far from having drinking habits, he led an extremely sober life.

The patient told me, (but he was then already at the beginning of the period of excitement,) that during the fourteen years of his study he drank enormously; but no one has been found to certify to the fact; on the contrary his relations all deny it. They have affirmed, separately, that he never had any attack of acute mania, and that if he had



sometimes a singular and quarrelsome temper, with some oddities such as old bachelors have, never could any of his acts be taxed as folly. We found no trace of mental alienation in his family.

D. told us he had been bitten by a mad bitch. The accident occurred in December, 1871, two and a half years ago. It was long and deep, and thus took a long time to heal. Two other persons were bitten by the same bitch, but our patient was bitten first. The other persons and himself were bitten several times and at several days apart. Our patient cauterized his own and the wounds of the two others, but we do not know if it was done immediately. They did not use the actual cautery, but simply ammonia and nitrate of silver.

The two persons bitten have not felt any ill effects from the bite. The bitch was short haired, small, and of no breed. D. found her in a camp during the siege, and he had such an affection for her that he allowed her to have her puppies on his bed.

See the circumstances under which the bite was given: D. had noticed for several days that his bitch was acting strangely, that she snapped at everything she encountered. His pupil in pharmacy, trying to prevent the bitch from tearing something, the animal rushed at him and tried to bite, upon which D. seized it and attempted to whip it, and thus was bitten on the hand. The beast was shut up in a room with food; she refused to eat or drink for four or five days, and had several fits of rage. She tore everything to pieces in the room; a Voltaire arm chair, a bed-spread, etc., etc. At the end of this time D. decided to get rid of the dog, and poisoned her with some drops of hydrocyanic acid mixed in some vitriol.

The autopsy was made by a veterinary surgeon, who declared that the dog died of "rabies canina." They told us besides, that this bitch for some time previous to the biting

of D., had licked constantly with her tongue the only one of her puppies which was left alive.

This puppy, three weeks old at death of mother, showed signs three weeks afterwards analogous to those of his parent. He refused food, springing with furor upon those who approached him. He succeeded in biting one of the persons who had already been bitten by his mother, and in the same place. The new wound was immediately cauterized with ammonia. This puppy died soon after, at the foot of the bed where he was chained. Before death he was also seen by a veterinary surgeon who affirmed that he presented all the signs of rabies. Finally, Madame X. says she has a little bitch who had been bitten by D.'s dog, but who has never shown any rabid symptoms—yet it is proper to add that this dog has long, thick hair, which may account for his not having been infected. She probably was not bitten at all, but only rolled over by the rabid dog. Be that as it may, the accident of December, 1871, had so pre-occupied the mind of our patient, that his disposition had become very sombre. He had frequent discussions with his friends upon the subject of hydrophobia, and endeavored to prove to them that there was no such disease; yet, happening to make the least bit of a scratch on the scar, he immediately cauterized it with ammonia and nitrate of silver; asked to attend one of his nieces who had been made sick through fright from a dog, a lively sentiment of uneasiness was plainly visible in his features.

Since January his character has become soured to such a degree, that it was noticed by those who approached him that he was no longer sociable; his affection for a little niece whom he much cherished, was almost changed to aversion, but it is true that during this time he had had discussions about money matters with his family, and also much family trouble. At the same time he returned to religious ideas, and even to religious practices, for which he had always evinced some aversion. A few days before he came to the hospital, he had

felt general malaise, with lassitude, extreme feebleness and insomnia. The 15th of June he was unusually taciturn. On the evening of the 17th, he wrote to Dr. Demarquay, whose acquaintance he had made in the ambulances (military hospitals) of Paris, begging him to come to see him, because he felt very sick; the next morning writing another, telling the Doctor not to disturb himself as he had decided to enter the *Maison de Sante*.

So, this morning D. quitted his domicile without letting his family know of his sufferings, pretending he was going a journey of some days, but coming in secret to the *Maison de Sante*, where he took a private room on the ground floor.

*Autopsy*.—30 hours after death, in a very warm temperature. Rigor.—Mortis very pronounced; reddish congestion on all the depending parts.

*Lungs*.—A little emphysema on the surface; on the two apices a few tubercles; from both lungs, which were very large, upon being cut escaped very black blood. The trachea and the larger bronchii were filled with a rose colored froth which completely obstructed the cavity of the vessels; the mucus membrane of the same is also red, whereas that of the smaller bronchii is normal, the ultimate bronchii containing no mucus. No pulmonary oedema. No little ecchymoses in the vicinity of the root of the lung.

*Heart*.—Is a little large, loaded with fat; both ventricles are full of diffuent black blood. No fibrinous clots or valvular lesions. On the internal face of the aorta we found large ecchymoses.

*Stomach*.—Is empty. At the level of the cardiac orifice we found upon the mucous membrane little ecchymoses and arborisations very marked. On the superior portion of the cul-de-sac, is an ecchymotic spot of an undefined contour, which is elongated and lies in the middle of a tufted and dark colored arborisation. Several of the replications of the



mucous membrane are the seat of brownish discolorations. The pyloric orifice healthy.

*Liver*.—Healthy.

*Spleen*.—Healthy.

*Kidneys*.—Capsule adherent, though putrefaction was already very pronounced, and the bladder contained no urine.

*Brain*.—Meninges are adherent and congested superiorly from the horizontal circumference. On the surface of the two lateral ventricles were found several light colored ecchymoses. The brain tissue is perfectly sound. The cerebellum, Pons varolii, and *Medulla oblongata* are all normal.

*Spinal Cord*.—The dura mater and pia mater, are both congested, principally at the level of the inferior part. The vessels were much congested, and, upon several points we found extravasations of blood. Special hardness of the "cauda equina." Ecchymoses at the level of emergence of the last intercostal nerves. Upon the posterior and inferior surface we remarked upon the pia mater numbers of small white star-shaped spots, resembling fragments of virgin wax, which were easily displaced under a jet of liquid.

M. Gombard, preparer of specimens in the laboratory of Prof. Charcot, has examined microscopically, the medulla oblongata and cord in a fresh state, but found no lesion. When these organs have become sufficiently hardened we shall examine them and give results.

#### DISCUSSION.

*Summary*.—A man of excellent health, non-alcoholic, having no mental alienation either acquired or hereditary, after several days of sadness and general uneasiness, is taken suddenly with hydrophobia; all the signs of *rage* being manifest; culminating in death in three days.

The autopsy shows the lesions which up to the present time have always been found in cases of death from mad dog bites. Two and a half years before the attack, the pa-

tient was bitten by a dog showing all the symptoms of "rabies canina." The autopsy was made by a veterinaire who declared absolutely that the dog was mad; and besides, this same bitch was nursing a puppy which died also mad, three weeks after its mother.

Such is, in a few words, the statement of fact, upon which we propose to make a diagnosis.

One thing appears without doubt to be settled; viz: the dog which bit D., was mad. The symptoms observed; the communication of the disease to the puppy which she was nursing and which she licked in an unusual manner the day before she became enraged; the death of the little dog with symptoms of rage; and the autopsies; all this leaves no manner of doubt.\*

On the other hand, the morbid symptoms observed in the case of D., were absolutely those of the true rage—aprexia at the beginning, sadness, insomnia, pain in the bitten hand; then the appearance of hydrophobia; the laryngopharyngeal spasms produced at sight of bright objects; at the sole idea of liquids; by the action of trying to drink; by the simple agitation of the air before his face; by the presenting of a bottle of ether; preservation of his intelligence and memory; absence of partial delirium: facial expression of fright during the spasms; marked secret terror betraying it by agitation; by the need to change place, and at the same time by the desire for repose, calm, silence and obscurity.

By the aid of reasoning, and of will power exerted over him, he, submitting to the influence of those around him, who, reassuring him and encouraging him by affecting

---

\* We know that autopsy gives one infallible proof of the rage in the dog—viz: When we find in the stomach, a mass of litter, of wood straw, chaff, horse hair, leather, etc., etc., even a year after death, we can affirm at once that the animal died of the rage. Then we know that the dog of D. did devour a leather fauteuil, a bed spread, etc.

themselves an unconcernedness they did not feel, was induced to eat, however little, and also to drink, by the aid of several artifices, producing thus a relaxation of the symptoms which has been very often noticed on the second day of the *rage*. A little sleep is obtained by the choral enemata, but soon the spasms return; the agitation is augmented without either delirium, fever, or contractions. During these attacks, the patient seems to obey a blind force, which dominates him for several minutes, but as soon as the spasm has passed, he excuses himself, asks pardon, assures us he will be calm, and recover his self-possession. Soon sputa-tion, which so far has been entirely absent, shows itself, appearing with the crises of furor, which augment in frequency and in intensity. In the intervals, the patient is conscious of his approaching end; demands a priest; becomes tender towards his relations; has exalted religious sentiments, and in those concerning his family, without delirium: at the same time imploring us in the most humble and touching accents, to disembarass his limbs from the cords of the straight jacket, and finally, falling into a sort of paralytic coma, he dies three days after the first attack.

Never do we see the symptoms of hydrophobia which are more clear, more complete, or more exempt from all complications. It is the unmixed classical type of *rage*.

I do not believe that any man can suppose here a case of *delirium tremens* under a hydrophobic form. Nothing in the symptoms, the antecedents, nor in the autopsy, authorizes any such hypothesis. Without, however, insisting, I pass on.

There is another form of hydrophobia, very analogous in its symptomatology and its termination, to the *rage virulent*.

It is one form of maniacal delirium, sufficiently rare in the ordinary conditions of our patients, but well known to those who treat cases of mental alienation, and which we



find remarkably described in the excellent work of Brierre de Boismont, which appeared in 1843 in the "Memoires" of the Academy of Medicine, under the title of *acute febrile delirium of alienation*. This paper, which has been very well analyzed by M. Labadie Laysane in the article on HYDROPHOBIA in the *Dictionnaire de Medecine et de Chirurgie Pratiques*, contains, in fact, many observations, wherein hydrophobia is noted and described with great care. The same subject has been treated by Lelut, Baillarger, Calmeil and Thuler, but in all these cases it was discussed as an hydrophobia, entirely special, which I will call *mental* and *voluntary*; whereas, the hydrophobia of the *rage* is entirely instinctive, and suffered by the patient, who wrestles against it, very often with a singular energy.

In the hydrophobia of alienation, there is much of spasm, and of furor; there is also more of anger and of agitation than there is in the real rage; and there is also sputation, but there is nothing which resembles the special spasm of the rage. It is much less the hydrophobia, than the refusal of drinks, which coincides the most often with the refusal of all species of alimentation; on the contrary, the really enraged one taxes his own ingenuity to help those who take care of him, to find some means by which he may drink. Our patient brought different forms of asophageal bougies for the purpose.

Many patients, in fact, imagine that if they can only drink, they will be cured.

Mental hydrophobia alone is capable of being happily influenced by the deglutition of liquids; the true rage is not at all modified.

It is not unusual to see the enraged ones, by force of will, manage to drink. They are not the less liable to die for that, nor is the disease, the least in the world, retarded by it.

My colleague, at the Maison de Sainté, Dr. Demarquay, has communicated to me a remarkable example.

During the siege of Paris, an old professor, his neighbor and friend, contracted the rage from a little dog who bit him on the lip, and died, enraged, at the house of M. Meunier, veterinary surgeon. The cause of the death of the dog was not told to his master, who, twenty days later, was himself taken with the rage.

"I closed the curtains of the bed," said M. Demarquay, "and tried to make him drink. From nothing but the idea, he was taken with internal convulsions, which seemed to affect the heart and the respiratory passages. After one crisis of these spasms, he managed at last to swallow some beef tea and some wine. During forty-eight hours, I made him swallow, four times a day, a glass of beef tea and of wine and water. The deglutition was always preceded by a crisis of alarming spasms, but, finally, he would drink. At the end of 48 hours, a few seconds after he had drank, he was taken with a violent spasm, during which he died."

But we contrast this hydrophobia (rage) with that of the merely alienated patients, who defend themselves like demons when we try to make them eat or drink; who close the mouth tightly, twisting themselves and striking out all around them: and uttering ferocious cries. There is such a capital difference between the two conditions, that in the chapter *differential diagnosis*, Briere de Boismont mentions meningitis, tetanus, epilepsy, etc., but does not mention *rage*, as if he judged that such a mistake was impossible.

Two years since, when I was physician at the hospital St. Antoine, a very curious case occurred in the service of Doctor Mesnet, who was so good as to ask me to examine it with him. This note is not yet published, but it has been read recently to the Society of Practical Medicine, and will soon appear in the *Union Médicale*, under the title of *Délire aigu hydrophobique*. (acute hydrophobic delirium.)

The patient exhibited all the signs of classic rage: respi-

ratory spasm, special sputation, constriction of the throat, efforts to drink, rapid death, etc.

Nevertheless, at the beginning of his affection, certain signs appertaining to the delirium of persecution or trouble, struck my learned colleague. Dr. Mesnet soon found out that the patient had had several accesses of mental alienation, with attempts at suicide. He was, moreover, a proved drinker; he had already once had symptoms of hydrophobia, and there had been mental alienations among his relations. Then the delirious conceptions increased, and imprinted upon the disease an entirely special type. The patient told us that a woman was the cause of his sickness. This woman was a fortune-teller. He had lived with her for ten years. He left her two weeks since. At this time this woman had great power over him. She shuffled the cards, then suspended in the fire-place a beef's heart, pierced with pins; and so long as it remained thus, the patient would be condemned to suffer. By employment of analogous means, she had already made a man suffer, by making him walk six hundred and seventy-five miles, without stopping or eating.

We see in this case that alienation occupies, in the general picture, a place almost as important as the hydrophobic symptoms, and I comprehend, up to a certain point, that if we depend upon this morbid element, we make of the hydrophobia a symptom of mental alienation. Nevertheless, I shall permit myself to make to my excellent colleague of St. Antoine some observations, not upon the title of his pamphlet, which is unassailable; it is, perhaps, too much so—but he is not specific enough. Unquestionably, the patient died with some delirium, and of hydrophobia. But did M. Mesnet intend to draw his observations as nearly like those of Brierre de Boismont as possible? The reflections which accompany it tend to make us think so. Then, I have re-read the memoir of Brierre de Boismont, and, as I said



before, I cannot find in the special hydrophobia of alienation anything but distant and superficial analogies to the hydrophobia of true rabies. On the contrary, in the case of Dr. Mesnet, it was entirely the respiratory spasm rabies, and all the habitual symptoms of the rabid virus, which we find entirely with the characteristic physiognomy. There is no fever, while it plays an important part in the observations of Brierre de Boismont, who entitles his memoir *Délire aigu fébrile des aliénés*, without introducing the word hydrophobia. Finally, it is impossible not to remark in the observations of M. Mesnet that there is absolutely nothing said upon the probability or improbability of a rabid inoculation. In the face of symptoms of rabies, one is led to inquire if there is not a combination of the two affections, rabies and mental alienation? In this hypothesis, rabies should be the initial malady, and pertinently to which condition the mental alienation might set itself up, in a subject predisposed, and would have the appearance of complication. I add that this observation is so different from those of de Boismont, I shall give the preference to this interpretation.

I will say the same thing of an observation gathered by Durante, in the service of our common master, M. le docteur Gueneau de Mussy, (thesis of Gras, Paris, 1860) There, also, was pyrexia at the beginning, symptoms identical with those of rabies; but the patient had delirium, and committed extravagant acts; he was alcoholic, like the patient of M. Mesnet. We have no certain indications as to his antecedents, as to his mental alienations, and we are ignorant if he did, or not, have any rabid inoculation. There, again, the union of symptoms of the rage, and of mental alienation, to me, appears to implicate a combination of the two morbid elements, and which we do not find thus united in the observations of Boismont.

It is not enough that a hydrophobic patient should have

even systematic delirium to entitle us to declare that his hydrophobia is symptomatic of madness: and I believe that we can often find in the symptomatic characters, and in the evolution of the malady, reasons sufficient to decide the question, which, nevertheless, I confess, may be extremely embarrassing in certain cases. But, in the case of D., there was nothing like this. Neither as an initial malady, nor as a complication, did madness appear. The preservation of his intelligence, and the absence of hallucinations, were noted nearly up to the period of paralysis. We know of no mental alienation in his family. As for himself, he had certainly oddities of character, and the fancies of an old bachelor: but every one agreed in representing him as a man of good sound sense, and of great energy of character: one who, by dint of intelligence and will, had succeeded in rising from the ranks of the workmen, and had, at great pains, obtained his diplomas. There is nothing, either in the past or present, which authorizes us to call the symptoms those of mental alienation, any more than those of alcoholism.

Shall we here agitate the question as to whether we have a nervous hydrophobia? That to me appears impossible, if we take the word in the sense generally taken, as applicable to special nomenclature—of hypochondriacal hydrophobia, which Dr. Brouardel has called *imaginary hydrophobia*, that which we might call *lyssophobia*, if this word had not been badly used by Dr. Bellenger, (thesis, Paris, 1845), to designate the true rage, of which he made, with Bosquillon, a simple nervous affection caused by terror.

In this sense, *imaginary hydrophobia* is an affection not very rare, of which certain examples have become famous, (le President de Trousseau, l'observation de Barbantini, 1817), but this affection is always cured, or at least, almost always. My colleague of the Maison de Santé, Dr. Demarquay, has

communicated to me a very interesting case which I am happy to relate briefly here :

In 1843, a man with rabies was brought into the service of M. Husson, at the Hospital Hotel Dieu. It was necessary to put him in a straight-jacket : and in this operation at which M. Demarquay, the Directeur, and a volunteer infirmary overseer named Guérin, proceeded with much trouble, the patient defended himself, trying to strangle those who held him, and covering their faces with slaver. The next day he died.

Young Guérin, eighteen or nineteen years old, being greatly frightened with the case, asked leave of absence to go home in the country to recruit, thinking he was sick. As he left the Hotel Dieu, he was violently bitten on the leg by a dog who was passing. He re entered quickly the ward. Dr. Demarquay put a constrictor bandage above the bite, which he cauterized deeply with the actual cautery.

Guérin, profoundly troubled, then set out, saying he should return in six weeks to die in the service. Forty days afterwards he came back to die, as he had said. The sight of water and of brilliant objects provoked in him a violent spasm. He could swallow nothing. We were all anxious about this poor lad. All these phenomena lasted forty-eight hours. At the end of this time, as he was still alive, Dr. Demarquay said to him in a spirit of pleasantry : " You have not rabies," because the other patient died in forty-eight hours : and M. M. Husson, Rastau, and Vigla spoke to him in the same strain. He recovered hope, he drank, and was cured.

It is in these cases of pseudo-rabies that Dr. Barth affirms he has never come across the symptoms described under the name of areophobia. Now, then, it is impossible to liken the case of D., so rapidly fatal, and so absolutely like the most virulent rage, to those imaginary hydrophobias, which may have some analogies to the virulent hydrophobia, more or less close, but



which differ radically by their termination. Still it can be objected that nervous or imaginary hydrophobia may terminate in death. This I do not deny absolutely, though I do not know of one authentic case. But, in a word, we can conceive that the imagination, over-excited by this train of ideas, may tend to a fatal nervous affection, only that what to me appears so difficult to believe, is, that this nervous affection assumes so absolutely the clinical signs of true rabies that it may be impossible to differentiate them.

In support of my opinion, I find an extremely curious fact published by a veterinary surgeon, M. Deluc, in a paper upon rabies, which he read to the Society of Medicine and Surgery, of Bordeaux, the communication of which I owe to the kindness of Mr. Bonley. This case, I must say, did not receive from me the same interpretation as from the author, M. Deluc, in fact, resuscitates the paradoxes of Bosquillon and of Bellinger, who hold that rabies is an effect of terror, and not of virulent inoculation. His conviction does not go so far, however, as to counsel abstaining from the cautery in cases of bites. But his paper is very interesting from the large number, which he has reported, of bites by dogs evidently mad, without tainting the persons bitten. This is another proof that the rabid contagion has less hold upon man than animals, and it is a fact too consoling not to be noticed in passing. But I come to the observation of M. Deluc, which I wish to analyze :

A young girl was bitten on the knee and licked on the lips by a dog evidently rabid, on the 9th of March, 1868. Thirty six days afterwards they came to find M. Deluc. *She had had delirium eight days. She had eaten nothing; had horror of drinks, and tried to bite.* "Bite if you will," said M. Deluc, and good-humoredly offered his cheek to her. This gesture, the inspiration of the moment, had its full effect; the patient cheered up, finished by drinking, and recovered, after, however, ten days of sickness. Certainly, in this case, the

patient was in a condition to die. But in what manner will she die? M. Deluc has told us: "Her exaltation would have augmented. Very weak from loss of nourishment, she would have decided to take nothing." That is to say, she would have died of mental alienation, and not of rabies. The hydrophobia of Mlle. X., was in the refusal of drinks, complicated with the refusal of food. Her delirium and her menaces to bite, give to her illness the true stamp of mental alienation. The duration of her sickness is not favorable to the hypothesis of rabies. We can not too much admire the cool courage, the conviction, and the excellent inspiration of M. Deluc; but if he flatters himself that he cured a case of rabies, he is mistaken. He has only cured a case of imaginary hydrophobia; and without proof to the contrary, I shall not admit that we can pass from the one affection to the other, nor that a patient having nervous hydrophobia can become affected with rabies, or true hydrophobia. All my clinical observations forbid me to admit that a concurrence of conditions so characteristic as those of rabies, can be sometimes the manifestation of a special virus, and sometimes the result of a simple functional deviation of the organism.

I cannot say whether I have been influenced by the impression I have felt about the unhappy patients I have seen, (this is the fifth); but it seems to me that the cases of true rabies, carry in the highest degree the seal of specific virus; and it also seems to me that nothing in the world, unless from the same cause, is capable of producing in so short a time, effects so formidable, and so identical to that in all these cases. Have we ever seen the neuroses reproduce thus faithfully the effects of a virus? Have we ever seen the syphilitic hypochondria, so tenacious, so deplorable, so overwhelming, terminate in syphilis?

I find moreover, analagous conclusions in a dissertation by Dr. Christian (*Gaz. des hôp.* 1st May, 1869.) For him, as

for myself, nervous hydrophobia is but a variety of hypochondriacal delirium.

This delirium may be calm or furious; it may terminate in death; but we never see established the rabid spasm, properly so called. The hydrophobia which is there produced sometimes, has no similitude with that of the true spasm of rabies.

I do not know for my part any authentic fact which may be contrary to these conclusions.

The note upon hysterical hydrophobia by Burgraeve of Gand (*Gaz. des hôp.*, 23 Sept., 1854), terminating in death, is too incomplete to enable us to affirm that it was in all points like a case of rabid hydrophobia. The phenomenon of sputation is not mentioned.

And in any case, if the symptoms had been absolutely those of rabies, I should conclude it was a true rabid hydrophobia, of the cause of which we are ignorant.

I can say as much of a fact which we find in the thesis of Matton (Strasburg, 1862).

A gardener thirty years old succumbed in forty-eight hours, with all the signs of rabies. As we could after the most minute researches establish that the patient had been bitten, and that on the other side he had experienced very severe chills the day before his attack, we have no hesitation in attributing the rigors to the outbreak of rabies. It is simply noted that the patient had never had any preoccupation particularly upon the subject of rabies, which made the author of the observation, M. Jacquier, entitle it without hesitation "*Rage Spontanée*" (spontaneous hydrophobia).

Nevertheless a fact described in the notes gives us a thought.

At the beginning of his affection he experienced a pretty lively pain in the right arm. It is therefore possible that this member had been the seat of an inoculation which had escaped the notice of the patient, or that he had dis-



guised it, as is not rare with such patients, who always strive against evidence.

Then, to conclude, in the presence of a pretended essential hydrophobia, terminated by death, I will submit this dilemma, viz: either the patient has presented all the signs of rabies, and it is in fact a *true* rabies, of which the cause remains unknown, or, he died with symptoms which were not absolutely those of rabies, and which might be referred to some variety of mental alienation.

Pertinent to this I remark in the history of D., certain circumstances and a little fact which has its importance. It appears certain that following the bite in December, 1871, D. had had his imagination extremely excited; he was unquiet, preoccupied; for a long time watching the cicatrix, and many times wrongfully touching it with lunar caustic, at the same time, whether he knew or not the works of Bosquillon and of Bellenger, he pretended to deny the reality of rabid inoculation, saying that the patients died only of fear. Before us, also, during the first hours at least, and until his reason was vanquished by frightful evidence, he affected a confidence which he did not really possess. He was not willing to appear to attach the slightest importance to his malady, neither to appear the least in the world preoccupied with the cicatrix on his hand. This affectation which has been so many times noticed in these patients, was here well characterized; but this is not all; he told us that a long time back, but could not remember the date, he believed he had felt some symptoms analogous to those he experienced when he decided to enter the *Maison de Santé*; but added he, "They were not so strong."

He at that time consulted a doctor of the hospitals, M. Potain, who had no remembrance of the fact, and after all I believe it was not M. Potain whom he consulted. What significance must we attach to this little fact? For me, I see in some degree a rough draft or sketch of imaginary hy-

drophobia coming in unexpectedly, pertinent to an insignificant malaise; one of those common sore throats to which he told us he had always been very subject.

If imaginary hydrophobia showed itself in our patient D. at all, it ought to have been at this moment. It should have been at a time nearer that of the bite, when he was able to rely on his own judgment at least, under the shock of the incubation.

However, he had nothing, for nobody around him I am assured had any knowledge of the fact; and those who were living intimately with him, have ignored his story of inquietude and his visits to M. Potain.

How can we allow that a nervous hydrophobia, not manifested under these conditions, waited a year or more later, before breaking out; that is to say, at an epoch when the security was greatest, not to say even complete, as in the case of D.? In general, it is one of the most constant characteristics of imaginary hydrophobia, that it appears very near to the time of the cause of it; and without speaking of the characteristics of D., which became a case of true, rabid hydrophobia, the *time* of its appearance does not well agree with the hypothesis of an imaginary hydrophobia.

Now, outside of imaginary hydrophobia, as we are able to define it, and as it is generally defined, there exists a certain number of cases badly defined, which have not yet a well established place in medical science, or which, at the least, only figure there as rare species, of which the classification is not yet well determined.

M. le Docteur Gros has dedicated a special division to these cases, of which there are six, in his Thesis, arranged under two categories. In the first, we find four cases of mortal hydrophobia, developed in subjects who had been bitten by dogs who did not go mad; and in the second, we find two cases of mortal hydrophobia developed in individu-

als who do not appear to have suffered any species of inoculation.

These are not the only cases known to day in science.

I have made an abstract of those which I have been able to find, and which I analyze briefly here. No doubt others exist, but which have escaped me.

(1) *A — Cases of Mortal Hydrophobia following the Bite of a Dog not Mad.*

1st. Obs. IX. (Thesis of Gros.) Roziere Journal de Séguillot, 1806: Child, thirteen years; hydrophobia; convulsions; sputation not noticed; death in two days. The child had been whipped the evening before, and was bitten on the cheek thirty or forty days before by a butcher's dog, who did not become afterwards rabid. Symptoms complete. Obs. dubious.

2d. Cases announced by Virey (Acad. de Méd., Feb. 15, 1827).

3d, 4th and 5th. (Acad. de Méd. in Arch., Gen de Méd., 1827, p 410) Three cases; one each by Lévillé, Longet, Villermay, and Marc, briefly reported: mortal hydrophobia in two cases, bitten by non-rabid dogs. The third case of Marc is more than doubtful, because the malady lasted twenty days.

6th. Obs. VIII. (Thesis of Gros.) Communicated by Velpeau (1835) to the Méd. So. of Emulation: Young boy, thirteen years, bitten in the cheek; cicatrix healed in eighteen days; one week later rabies *declared itself*; dead in three days. The dog was not mad, and was killed the evening before the death of the child. Diagnosis of Velpeau. Symptoms not noted.

7th. Obs. X. (Thesis of Gros.) Obs. of Putégnat, of Sunéville, Gaz. hebdomadaire, 8th June, 1860. Child nine and one-half years; all the signs of rabies; dead in three days; had been bitten six weeks before, by a dog who was driven



away with a stick from a house where he was following a rutting bitch. The dog has not become rabid since.

8th. Obs. XI. (Thesis of Gros.) Young man twenty-nine years; died rapidly with all the signs of rabies; had been bitten seven or eight months before by a dog who had not gone mad up to the death of the patient.

9th. Obs. of Decroix. (*Abeille Méd.*, 14th Sept., 1863.) 21st June, 1862.—The dog Tom is bitten by the dog Black. 10th July, 1862.—Tom bit a horse and several dogs, among them Black. 13th July.—Tom died in rabid. 15th May, 1863.—The horse died mad; Black has not been rabid. M. Bouly, in the discussion in the Acad. de Médecine, admitted that Tom must have been bitten by a rabid dog, but not the dog Black.

10th. Obs. of Delpach. (*Gaz. des hôp.*, 1869.) A dog excited by a rutting bitch, who was too small to take him, bit a porter who came to prevent him, and drive away the bitch; also bit a carter, under the same circumstances, and tried to bite his master. They drowned the dog, who showed no signs of rabies. Ninety two days after the bite, the porter died of hydrophobia.

**B.—Cases of Mortal Hydrophobia without Probable Innoculation.**

1. Obs. XII. (Thesis of Gros *Gaz. des hôp.*, 1858, p. 75.) Soldier thirty years; libidinous and blenorrhagic, spermatorrhæ; rabiform hydrophobia; hallucinations; sputation. Patient retained his reason. Emphysema around the trachea. At the end, hydrophobia diminished. He drank, with difficulty, a pint of wine and water. Coma. Dead in four days.

2. Obs. XIII. Thesis of Gros. (*Gaz. Méd. de l'Algérie*, 20th of September, 1868, and *Journal du progrès*, p. 278, Dr. Tisseine, 1856.) Soldier of the train; hydrophobia; moderate fever; access of furor; sputation. Dead in three days. Bronchial froth. He denied being bitten.

3. Obs. of Jacquier (*Bulletin de therap.*, 1857, p. 549). Gar-

dener thirty years: all the symptoms of rabies: pain in the right arm: no bite: no belief in hydrophobia. Dr. Jacquie gave his observation the title: *Rage spontanée*.

4. The thesis of Mondville, spontaneous hydrophobia produced by moral causes. *De la rage spontanée produite par des affections morales*, 1821. No. 197, contains six observations, with few details, very doubtful as to symptomatology. Among others, that of a servant girl violated during her menstruation. A fact relative to a young soldier seems much more like the rabies (spasms, sputation, begs that everybody will withdraw when he feels the access coming.)

6. Obs. of Durante (VII du la these de Gros.) All the signs of the rabies: signs mixed up with those of mental alienation. No inoculation established.

7. Obs. of Mesnet (*Union Médicale*, 1874.) Same circumstances.

We can, grouping together all these cases, and without touching here even incidentally upon the question of *spontaneous* hydrophobia in man, leave them until we have more ample information upon the action of essential hydrophobia.

It is that which makes M. Brouardel, (loc. cit.) apply the name of *imaginary hydrophobia* to all the preceding group.

And now, see the objections that can be brought against my argument.

They say: "Your patient did not die of inoculated rabies: it is out of all possible limits of incubation: and a bite which had run back two and one half years, was as though it had not been made. That which contributes to prove this, is, that neither of the two persons bitten at the same time had hydrophobia. It was, therefore, death caused by a particular species of imaginary hydrophobia, as are all the deaths of patients who have been bitten by non-rabid dogs, or who have not been bitten at all. To establish that your patient died of virulent rabies after an incubation of two and one-half years, there was

one single proof which you have not furnished. It was to inoculate one or more dogs with the spittle of the patient while he was still living. If the experiment had succeeded, no body could have denied the virulence of the rage; at least, it would have been an argument in favor of the incubation of two and one-half years; and in the absence of this proof, we shall always insist that the patient died of imaginary hydrophobia."

Here is the objection in all its force. At all events I have have not attempted to weaken it. But let us see if it cannot be answered. Firstly: The argument held that the two persons bitten at the same time as our patient, retained their health, is not absolutely good. We know, thank God, that a rabid dog does not make as many inoculations as bites. The administration statistics from Dr. Brouardel (*loc. cit.*), gives, it is true, forty-seven per cent., but our colleague remarks that the greatest part of the cases, not followed by any accident, escape the notice of the administration. The Kingdom of Wurtemberg gives twenty-eight deaths in one hundred and forty-five bites; the General Hospital in Vienna, in 1860, twenty five in one hundred and fifteen. "In thirty-six persons," says M. Leblanc (*Documents pour servir à l'histoire de la rage*, Paris, 1873), "bitten by rabid dogs who died under my eyes, thirty-one escaped with no symptoms, and five died."

I have already produced the numerous cases of non contagion, which the paper of M. Deluc contains. In the reply which he made to this paper, Dr. Dapont, (*Soc. de Méd. et de chir.*, de Bordeaux, April, 1874), confirmed the statement of M. Deluc, and said he could bring a large number of cases to bear upon the same point. It is nothing, then, out of the ordinary to see two out of the three escape.

I come to the question of incubation. Now, what do we know to day upon this point? Very little. We ignore absolutely the nature of the rabid virus; how it has spontaneous birth



in certain animal species: how it acts in organisms which it has penetrated through inoculation. In this regard, our forefathers, or the ancients, were much less affirmative than we are to-day. People have tried to put more precision into this difficult question; and have closely eliminated a large number of cases, more or less old women's stories.

The errors of diagnosis so frequent in matters concerning rabies; the notions recently acquired upon the subject of hydrophobia, viewed as a symptom of alcoholism, of mental alienation, of tetanus, of the grave fevers, of hysteria, of epilepsy, of certain kinds of poisoning, &c., have finished by inspiring a scepticism nearly absolute upon all the past; so that it is to be feared we have erased cases which appear too exceptional, while we have fixed the extreme limits beyond which the rabid virus should be no more expected. It is generally admitted to-day (report of M. Tardieu to the consulting committee on hygiene, 1869; communication of M. Bouley, at the Academy of Sciences, April 4, 1870), that rabies declares itself ofttest in the two months following the inoculation; three months passed, it is rare; it is exceptional that six months elapse before it breaks out; after eight months, according to the opinions of those men who are occupied with the question, and who are the most competent, we find no case which is not susceptible of the strongest objections. Nevertheless, Dr. Beauregard, who, upon this point, agrees with the general opinion, admits, exceptionally, two cases in which the incubation had lasted much longer. In one of the cases it lasted ten months (*Besr., mém. de méd. milit.*, second series T. XVII., 1856); in the other, eighteen months, (Valentin, *Union Méd.*, 1856, p. 432). These two observations appear to my colleague to present the characters of undoubted authenticity.

I have made, in this regard, researches less extensive than I

could have wished, and here are a few cases to add to the preceding ones :

In the *Annals méd. psych.*, 1843, M. Mesnet has had the kindness to indicate to me, on pp. 92 and 132, two observations one by Aubanal, formerly interne in Paris, now of the Asylum for Mental Alienation in Marseilles; the other, without the author's name, read at the *Soc. de Méd.* of Paris, in which the incubation had lasted eleven and twelve months. These two observations appear to me still more indisputable than those of Dissez or of Valentin. I will say as much of the note of Corriere, interne with M. Huguier, at Beaujon (*Ann. des hosp.*, 1864, No. 116), where the incubation had lasted eighteen months. The very curious circumstances of the observation and the reflections which accompanied them, are by M. Després, who succeeded then, as Surgeon of the Central Bureau, M. Huguier, at the Beaujon Hospital.

M. Champagnat, in his thesis upon hydrophobia (Paris, 1867), cites, under the authority of John Hunter, an incubation of seventeen months.

M. Deluc (loc. cit.) said he had an authentic case of incubation of one year in a dog.

I am convinced that further researches would discover other analogous cases.

We see, therefore, that, exceptional as they are, these cases are not absolutely rare. Now, I ask: Is not an incubation of eleven, twelve, fifteen, or eighteen months something for us almost inexplicable? From the moment we see that a virus can sleep eighteen months in the system, without any sign of its presence, is it unlikely that the same phenomena could be prolonged six months or one year longer? and where shall we stop?

Nothing, then, in my opinion, demonstrates that rabid virus may not hold itself in abeyance in a contaminated organism to a much more extended time than is admitted

to-day; and there is nothing to prove that I have not the right to record my case with those I have cited.

Without doubt, the best argument I could bring would be a positive inoculation of the saliva of the patient, in which I made default. I had hoped to make this experiment, but time and means both failed. *Occasio preceps*. A few hours after the death of D., a most distinguished veterinary surgeon, M. Weber, who heard of it by accident, came to offer his services, but it was too late.

After all, I do not know whether the experiment would have cut short the discussion.

If the inoculation had succeeded, an objection would have remained, a little common-place, to be sure, but still difficult to answer. It might have been said that the *rage* of D., well and duly recognized as virulent, was due to an inoculation posterior to the bite of December, 1871, of which the patient was unaware, or that he had voluntarily disguised it. As this objection can always be offered, I shall be permitted to remark how little is here offered of probability.

In the long conversation I had with D., he entered into the smallest details of his life, and himself recounted the incidents of the bite of 1871. How can we believe that he kept disguised another bite?

As to an inoculation by licking or lapping, it is not very probable. We are bound to believe that D., who had been so much preoccupied with the events following the bite, would have had reason afterwards to keep all dogs at a respectable distance. All the evidence I have been able to gather convinces me that he had but the one inoculation—that of 1871. Then, in case the experimental inoculation had failed, what conclusion could we come to? Do we know at just what point the most virulent rabies is inoculable from man to the dog? Such trials have often failed.



I will cite among others the note of M. Bergeron, (*arch. de méd.*, 1862), where trials were made, with all the care imaginable, and under the best condition to obtain results. The number of positive inoculations was in the minimum. M. Bouley has written "that the saliva of man is virulent, but in a much lesser degree than that of the carnivora."

We see, then, that a negative result would not have been certain proof of the non virulence of the rage of D.

If this is so, in the actual state of science, seeing the complete ignorance we have of the possible duration of the incubation of rabid virus, and seeing the numerous examples of incubation prolonged from twelve to eighteen months, it appears to me impossible to call *spontaneous*, a hydrophobia completely identical in its form to the *virulent* rabies, and which declares itself two and one-half years after the bite of a dog clearly mad; and I conclude, definitely, for the reality of the incubation.

Though this discussion may be much too prolonged, I will ask permission of the Academy to add a few words upon the symptoms and the pathological anatomy of rabies.

Already, in a first memoir, which runs back to 1859, and which M. Brouardel has done me the honor to quote, at the same time combatting it, I said that the bronchial froth (*écume*) appeared to me to play an important part in the phenomenon of sputation. The fact had forced itself upon me, as I was observing a hydrophobic patient. I was ignorant at that time that it had been discussed and established in an excellent article by Trollet and Villerme. (*Diction. des Sciences Médicales*). Finding it there excellently well described, I was astonished that, in 1859, it had not become current coin in science; so much the more that Bérard and Denonvilliers, in their *Compendium de Chirurgie*, have added the weight of their authority. Since that time, M. Gros has admitted it in his Thesis (1860). In 1869, in the *Société Médicale des Hôpitaux*, I reproduced my

remark, pertinent to an interesting observation on rabies, communicated by M. Millard; and in the following meeting, M. Ernest Besnier brought to us an observation of M. Lagorce-Lavergne, of Lille, who also attributed to the bronchii the principal origin of the rabid froth.

M. Boucher, of Ville-Jossy, also agreed in this opinion.

M. Brouardel still refutes that, to-day, meanwhile relying upon an authority which I highly respect, certainly, that of M. Bergeron. I maintain, nevertheless, my statement; and in the recent cases, as in that of 1859, here is what I have observed, viz: The enraged patient does not secrete saliva, or, but very little, in the first hours; that is admitted by all parties. The mouth is dry; the tongue pasty; the buccal mucous membrane is pale, as far as, and including the soft palate, also the tongue.

Already, at this time we can perceive, at least in certain cases, a redness pretty lively and shining, at the extremity of the pharynx, compared with the paleness of the rest of the mucous membrane.

The conditions remain thus for some time. It is only a few hours before death that sputation appears, and suddenly, the violent attacks of furor break out. So far, he has had nothing but agitation, and that we could control more or less easily by reasoning. From this moment the straight-jacket becomes indispensable. When the patient is about to expectorate, we are notified by a sort of vomative effort, which is limited to the pharynx, the diaphragm taking no part. It is a kind of regurgitation. Then the patient says he is *strangling*; that *bile suffocates him*; that he must vomit; if he is lying on his back, he begs to be turned on to his side, so that the "*bile will run out*" the more easily. That which we have taken for an effort of deglutition of saliva, is an effort of regurgitation—of expulsion—and it seems to me to be determined by the entrance of the bronchial froth upon the isthmus of the fauces. When the patient feels

that froth is in his mouth, he is taken with spasms, and with chills, and he recoils with horror. The water which he tried to swallow, produced the same effect. I think that this froth ascends slowly, but incessantly, driven, perhaps, by the ciliary epithelium, or, perhaps, by some special spasm of the respiratory passages. While the quantity of it is elsewhere, it is most singular that a few moments before trying to expectorate, the patient's mouth is dry, and he complains that he has not saliva.

I do not pretend to deny that at this very moment the salivary glands may begin to secrete. About this I know nothing.

I have not said that the rabid virus is exclusively contained in the bronchial froth, nor do I now know more about it. I am equally in the dark as to what takes place in the dog. I am content to acknowledge in the human subject, following Trollet and Villermé, the large part which the bronchial froth takes in the phenomenon of sputation. And I believe I am the first to describe the movement of regurgitation, which signalizes the arrival of this froth in the mouth. I believe every body would verify the exactitude of my description, if they could once see this when opportunity afforded.

In accordance with this explanation, in the two autopsies I have made, I found the large bronchi and their divisions filled with a quantity of rose colored froth (*écume*). In the same points the mucous membrane was of a lively red, with little sanguineous effusions; and on the contrary, the buccal mucus membrane is pale and seems normal.

It is very remarkable that in nearly all the autopsies made, we find the apparent integrity of the salivary glands. We find neither redness nor hypersecretion, whilst the bronchial froth, and the redness of the pharynx and of all the air passages are very often noted.

Trollet and Villermé have set out the absolute impossibility of supposing that this bronchial froth proceeds from

saliva, which goes the wrong way during deglutition. "It is not the saliva which constitutes the frothy sputum; this on the contrary seems to ascend from the chest."

It is truly surprising that, with such a quantity of bronchial froth, and such acknowledged signs of irritation of the mucous membrane, the patients *do not cough*. There is probably present a special kind of bronchial anesthesia, and it is without doubt the absence of the cough which has prevented most authors from attributing to these lesions the importance which they seem to me to merit.

Still the cough does sometimes exist, (obs. de Michel et de Féréol *actes de la Soc. Méd. d'obs.*, 1859,) and in these cases we found signs of bronchitis on auscultation. But we can conceive that it is often difficult to auscultate at the moment when sputation is produced; the patient being too much agitated, and often is in the straight-jacket. But nearly always at the beginning he complains of oppression; a feeling of constriction at the throat, and of weight on the sternum, whilst he never complains of puffiness or swelling, nor of pain either in the parotid or sub-maxillary glands.

It would not be exact, for the rest, to say that the patients succumb to asphyxia, if we take the word in the sense of a mechanical obstruction to respiration.

The lesions which we observe upon the dead body, are much less those of asphyxia than of congestion. The little ecchymoses about the umbilicus of the lung are often absent, and are always very slightly marked.

The patients are not asphyxiated, properly speaking; they fall into a kind of comatose torpor, which we have called the paralytic period, or else they die suddenly. And in either case it seems that it may be by an exhaustion of the nervous influx.

It would not be just any longer to attribute to cutaneous hyperesthesia, the symptom signalized under the name of acrophobia, a symptom to which Dr. Barth attaches consid.



erable value, since he says that he has never seen it established in the imaginary hydrophobias.

Cutaneous hyperesthesia, it is true, has been noted in a large number of cases, among others by M. Bergeron (*arch. de méd.*, 1862).

On the other hand I have established in my patient a very marked anesthesia. The same fact is described in an interesting observation of M. Delpech (*Gaz. des hôp.*, 1869). The patient had cruelly wounded himself on the head wishing to kill himself, and said he did not suffer from it, and that it did him no harm.

We know that analgesia is the rule in rabies in brute animals. In this last we often see animals tear and wound themselves without showing any sign of pain. They feel, however; they recoil when we touch them with red-hot iron, but do not cry, not even when they are rolled or pushed about, at the same time biting sharply. The spasm produced by the agitation of the air seems not to depend so much upon the cutaneous hyperesthesia, which is not established, as upon a special excitation of the respiratory nerves.

The rabid spasm, itself, has in its form something of respiratory complication, which has not escaped any observer, and which distinguishes it absolutely from the hydrophobic spasms due to other causes than the virus of rabies.

The principal symptoms, and the principal lesions of rabies seem, therefore, to cluster round the respiration.

Everything is consistent with this view; and there is in this concordance a powerful argument in favor of the important part which it is necessary to attribute to the bronchial froth, in the pathological history of rabies in man.

Having arrived at the end of this discussion, I will, if the Academy permit, sum up, under the form of propositions:

1. The incubation of rabies is most often limited to the

two first months of innoculation, but can, exceptionally, extend itself much longer, viz: as much as eighteen months, as much as two and a half years.

2. The symptoms of rabies, habitually very uniform, may assume very different aspects under the influence of a number of elements, (mental alienation, alcoholism, hysteria, etc.); but there are certain signs, such as the respiratory spasm, the special mode of sputation, the symptom described under the name of *aërophobia*, which belong only to rabies and which ought, very often, to permit of a diagnosis under these complications.

3. If imaginary hydrophobia, which is generally cured, can terminate in death, we ought to find in the symptoms sufficient reasons to affirm that it is not veritable rabies.

4. The bronchial *écume* (froth) plays an important part in the phenomenon of sputation in hydrophobic patients; and the principal symptoms, as well as the principal lesions in rabies in man, are grouped around the respiratory functions.

It is the respiratory character which distinguishes rabid hydrophobia from all other hydrophobias of a *non-virulent* kind.

NOTE BY THE TRANSLATOR.—To avoid repetition, the word rabies, wherever used without qualification, represents the condition of innoculation by the virus of "*rabies canina*."

The translator desires, also, to add a case from his friend and confrère, Dr. Maci, as follows: Two brothers in Bordeaux were bitten by a dog supposed to be mad. One brother went to America. After eighteen months, hearing nothing from the brother who remained at Bordeaux, he returned, and found that his brother had died of hydrophobia. He was taken sick at once, and died of hydrophobia. Details not known.







